Guided self-help for functional (psychogenic) symptoms

Guided self-help for functional (psychogenic) symptoms

A randomized controlled efficacy trial

M. Sharpe, MD
J. Walker, MBChB
C. Williams, MD
J. Stone, PhD
J. Cavanagh, MD
G. Murray, PhD
I. Butcher, PhD
R. Duncan, MD, PhD
S. Smith, PhD
A. Carson, MD

Address correspondence and reprint requests to Professor Michael Sharpe, Psychological Medicine Research, Department of Psychiatry, University of Oxford, Warneford Hospital, Oxford OX3 7JX, UK
michael.sharpe@psych.ox.ac.uk

ABSTRACT

Objectives: Functional (psychogenic or somatoform) symptoms are common in neurology clinics. Cognitive-behavioral therapy (CBT) can be an effective treatment, but there are major obstacles to its provision in practice. We tested the hypothesis that adding CBT-based guided self-help (GSH) to the usual care (UC) received by patients improves outcomes.

Methods: We conducted a randomized trial in 2 neurology services in the United Kingdom. Outpatients with functional symptoms (rated by the neurologist as "not at all" or only "somewhat" explained by organic disease) were randomly allocated to UC or UC plus GSH. GSH comprised a self-help manual and 4 half-hour guidance sessions. The primary outcome was self-rated health on a 5-point clinical global improvement scale (CGI) at 3 months. Secondary outcomes were measured at 3 and 6 months.

Results: In this trial, 127 participants were enrolled, and primary outcome data were collected for 125. Participants allocated to GSH reported greater improvement on the primary outcome (adjusted common odds ratio on the CGI 2.36 [95% confidence interval 1.17–4.74; $p = 0.016$]). The absolute difference in proportion "better" or "much better" was 13% (number needed to treat was 8). At 6 months the treatment effect was no longer statistically significant on the CGI but was apparent in symptom improvement and in physical functioning.

Conclusions: CBT-based GSH is feasible to implement and efficacious. Further evaluation is indicated.

Classification of evidence: This study provides Class III evidence that CBT-based GSH therapy improves self-reported general health, as measured by the CGI, in patients with functional neurologic symptoms. *Neurology*® 2011;77:564–572

GLOSSARY

CBT = cognitive-behavioral therapy; **CGI** = clinical global improvement scale; **CPS** = change in presenting symptoms scale; **GSH** = guided self-help; **NNT** = number needed to treat; **OR** = odds ratio; **SF-12** = Medical Outcomes Short Form 12-Item Scale; **UC** = usual care.

Many somatic symptoms such as pain, weakness, and dizziness are unexplained by organic disease.[1] Such symptoms are referred to as "functional," "psychogenic," "medically unexplained," or "somatoform," although all these terms are problematic.[2] These symptoms account for one-third of attendance at medical clinics[3,4] with neurology having one of the highest rates.[4,5] The outcome after medical consultation is poor.[6,7] As with many conditions at the interface of neurology and psychiatry, integrated approaches to patient management have been neglected.

We know that intensive cognitive-behavioral therapy (CBT) can reduce the symptoms, distress, and disability of patients with functional symptoms.[8] However, there are major obstacles to its delivery in practice because patients often regard psychological treatment as inappropriate and referral to mental health services as unacceptable and CBT therapists may not be available in all communities. These obstacles could potentially be overcome: CBT could be adapted to directly address the patients' somatic concerns,[9] it could be delivered in the neurology clinic, and it could be provided in a self-help form (bibliotherapy). CBT-based self-help is effective for other conditions, such as de-

Podcast

From the University of Edinburgh (M.S., J.W., J.S., G.M., I.B.), Edinburgh; University of Glasgow (C.W., J.C.), Glasgow; NHS Greater Glasgow and Clyde (R.D.), Glasgow; and NHS Lothian (S.S., A.C.), Edinburgh, Scotland, UK.

Study funding: Supported by the UK Medical Research Council (grant G0300876).

Disclosure: Author disclosures are provided at the end of the article.

pression, especially if combined with face-to-face guidance as so-called guided self-help (GSH).[10] CBT-based GSH has not, however, been evaluated as a treatment for functional neurologic symptoms.

We aimed to test the hypothesis that adding GSH to the usual care (UC) received by neurology outpatients with functional symptoms would produce a greater improvement in their self-rated health at 3 months after randomization. We also measured symptoms (physical and psychological), functional illness beliefs, health anxiety, and satisfaction with care at 3 and 6 months.

METHODS

Standard protocol approvals, registration, and patient consents. Approval was obtained from the Multi-Centre Research Ethics Committee for Scotland (05/MRE00/96). All participating patients gave informed consent. The trial was registered at www.controlled-trials.com (International Standard Randomized Controlled Trial Number Register Identifier ISRCTN47705219).

Study design and setting. The study was a 2-arm parallel group randomized controlled trial with patient-rated outcome assessment at 3 months and at 6 months. The trial was conducted in 2 regional Scottish National Health Service neurology services (Edinburgh and Glasgow), which together serve a population of approximately 4 million.

Participants and procedures. We included adult neurology outpatients with functional symptoms identified by screening and referred by their neurologist. Between February 2006 and January 2007, we asked neurologists to rate the symptoms of all patients attending general neurology clinics on the following 4-point Likert-type scale: To what extent do you think this patient's symptoms are explained by organic disease?—not at all, somewhat, largely, or completely—and to refer those with functional symptoms (defined as not at all or only somewhat explained by organic disease) to the trial.

We gave referred patients a study information leaflet and an appointment with a trial doctor, at which written consent was obtained. We excluded patients who 1) were judged to be unable to use GSH (significant cognitive impairment or unable to comprehend English), 2) required specialist psychiatric care (severe psychiatric disorder, currently engaged in psychological or psychiatric treatment, or suicide risk), or 3) had headache as their only symptom (because of the key role of addressing analgesic use in their management).

Randomization. We randomly assigned consenting patients in a 1:1 ratio to either usual care alone or usual care plus GSH. The randomization sequence was computer-generated and stratified on 2 potentially prognostic variables: neurology service (Edinburgh or Glasgow) and symptoms being not at all or at least somewhat explained by organic disease. The trial doctors obtained the treatment allocation only after providing each patient's data to a remote telephone-based randomization system.

Treatment conditions. All participants received UC, which was enhanced by communicating the psychiatric diagnoses made during the assessment (for example, major depression) to the patient's primary care doctor and neurologist. We recorded all treatments received during the trial when outcome data were collected. Participants could not be masked to treatment allocation.

UC alone. Participants allocated to UC received UC alone.

UC plus CBT-based GSH. We offered all participants allocated to GSH a CBT-based self-help workbook and face-to-face guidance sessions in its use, in addition to UC. CBT is a form of psychological treatment that aims to improve patients' physical symptoms, emotional state, and functioning by helping them to understand and, where necessary, change how they think about and respond to their symptoms and life situation. We developed the workbook using existing CBT-based self-help manuals for depression and anxiety and refined it by piloting.[11,12] The book explained functional symptoms[9,13] as changes in nervous system functioning that were influenced by psychological and behavioral factors rather than simply psychogenic factors.[14] It also included 1) an explanation of how functional symptoms are diagnosed, 2) a description of common symptoms and the associated anatomy, physiology, and psychology, and 3) self-management techniques, such as ways to reduce unhelpful thinking about and coping with symptoms. More details are available from the authors.

Guidance sessions (maximum 4 half-hour sessions over 3 months) were given face-to-face (by telephone if the patient was unable to attend the hospital) by either a nurse or a psychologist (both trained in CBT) in accordance with a guidance manual. A neuropsychiatrist (A.C.) provided regular supervision. We audio-recorded all guidance sessions; a randomly selected 10% sample was independently rated for adherence to the manual.

Data collection. We collected baseline data before randomization and outcome data at 3 and 6 months after randomization using mailed self-report questionnaires. Participants were reminded by telephone, and, if necessary, their questionnaire data were obtained by dictation to a research assistant who was blind to treatment allocation.

Measures. ***Baseline data.*** Demographic and clinical variables (age, sex, marital status, employment status, nature, and duration of symptoms) were recorded at interview.

Psychiatric diagnoses were made using a semi-structured interview based on the PRIME-MD.[15]

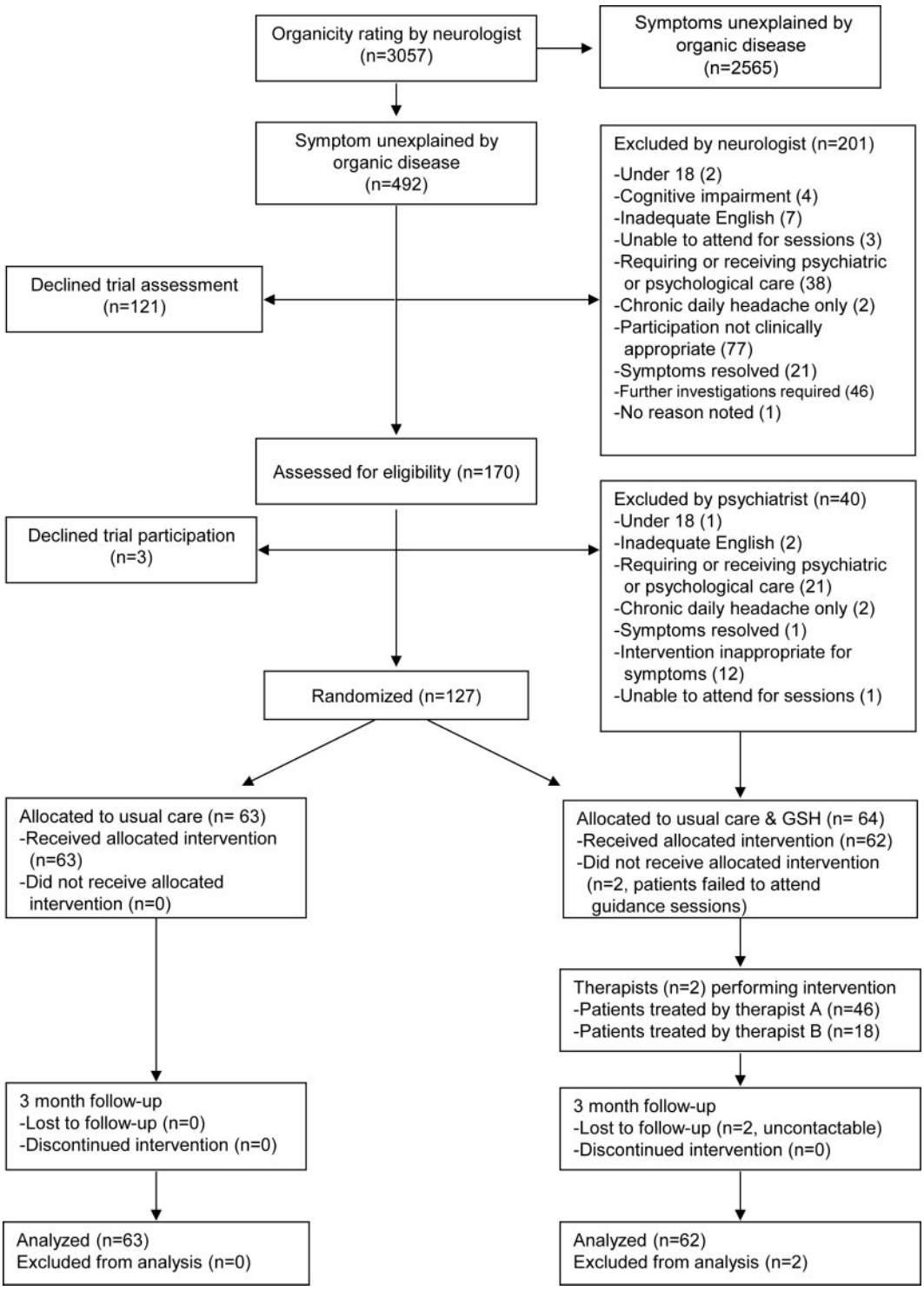
Symptom burden was measured using the Patient Health Questionnaire (with sexual and menstrual items removed) to leave 13 items.[16] Physical function was measured using the subscale of the Medical Outcomes Short Form 12-Item Scale (SF-12).[17]

Anxiety and depression were measured using the Hospital Anxiety and Depression Scale.[18] Health anxiety was assessed using items from the Whiteley Index[19]; participants were asked to answer yes or no to the following questions: Do you think there is something seriously wrong with your body? Do you worry a lot about your health?

Illness beliefs were assessed using items from the Illness Perceptions Questionnaire[20]; participants were asked to indicate how much they agreed with the following on a 5-point Likert scale (strongly disagree to strongly agree): My symptoms are likely to be permanent rather than temporary. My symptoms are a mystery to me.

Outcome data. Self-rated global improvement measured at 3 months using the clinical global improvement scale (CGI) was the primary outcome. This 5-point Likert scale asked participants to rate their general health as much worse, worse, unchanged, better, or much better, compared with how it was at

Figure 1 Flow of patients



the time of their original appointment at the neurology clinic. This simple scale has been found to correlate with other specific outcomes in this population.[6]

The change in presenting symptoms scale (CPS) was measured using a similar scale, on which participants rated the "symptoms for which you came to the clinic."

Treatment received during the trial was determined by asking participants to list all treatments (talking treatments, medication, and other treatments) they had received. For participants allocated to GSH, the number and duration of guidance sessions were recorded by the therapists.

Participants' satisfaction with the overall quality of their treatment (poor, fair, very good, or excellent) and whether they would recommend it to a friend (definitely not, probably not, possibly, or definitely) was assessed using 4-point Likert scales.

Finally, measures of symptom burden, physical function anxiety, and depression were repeated at the outcome assessments.

Table 1 Pretreatment demographic and clinical variables by treatment arm

Variable	Usual care (n = 63)	Usual care plus GSH (n = 64)
Neurology department, n (%)		
Edinburgh	49 (49)	50 (51)
Glasgow	14 (50)	14 (50)
Age, y, mean (SD)	44.2 (12.9)	40.9 (10.1)
Male sex, n (%)	18 (29)	19 (30)
Marital status, n (%)		
Married/partner	37 (59)	31 (48)
Single	14 (22)	20 (31)
Divorced/separated	12 (19)	13 (20)
Employment status, n (%)		
Working[a]	30 (48)	39 (61)
Organicity rating, n (%)		
Not at all explained	35 (56)	34 (53)
Somewhat explained	28 (44)	30 (47)
Duration of symptoms, n (%)		
<1 y	15 (24)	13 (20)
1–5 y	27 (43)	35 (55)
>5 y	21 (33)	16 (25)
Presenting symptoms, n (%)[b]		
Pins and needles/tingling	31 (49)	32 (50)
Pain	28 (44)	36 (56)
Numbness	29 (46)	23 (36)
Headache	21 (33)	21 (33)
Weakness	19 (30)	21 (33)
Dizziness	18 (29)	16 (25)
Fatigue	16 (25)	16 (25)
Tremor/shaking	8 (13)	11 (17)
Visual disturbance	8 (13)	12 (19)
Blackouts	7 (11)	5 (8)
Psychiatric diagnosis (PRIME-MD), n (%)		
Major depression	13 (21)	11 (17)
Panic disorder	42 (67)	40 (63)
Agoraphobia	3 (5)	4 (6)
Generalized anxiety disorder	25 (40)	23 (36)
Major depression	13 (21)	11 (17)
Panic disorder	42 (67)	40 (63)
Medications, n (%)		
Antidepressant	25 (40)	28 (44)
Opiate	26 (25)	15 (23)
Anticonvulsant	5 (8)	12 (19)
Symptom burden (PHQ-15), mean (SD)	7.2 (3.2)	7.4 (3.0)
Depression (HADS), mean (SD)	6.8 (4.2)	6.4 (4.6)
Anxiety (HADS), mean (SD)	8.5 (4.7)	8.4 (4.1)
SF-12 Physical function, mean (SD)[c]	48 (40)	56 (36)
Belief: Symptoms permanent, mean (SD)	3.0 (1.2)	3.1 (1.1)
Belief: Symptoms a mystery, mean (SD)	3.8 (1.0)	3.6 (1.1)
Health anxiety: Yes to "think something seriously wrong with my body," n (%)	22 (35)	21 (33)
Health anxiety: Yes to "worry a lot about my health," n (%)	52 (33)	53 (34)

Abbreviations: GSH = guided self-help; HADS = Hospital Anxiety and Depression Scale; PHQ-15 = Patient Health Questionnaire; SF-12 = Medical Outcomes Short Form 12-Item Scale.
[a] Patients were not working because of their health in all but 2 cases.
[b] Patients could have >1 presenting symptom; the 10 most common symptoms are shown.
[c] Number available: n = 63 for usual care; n = 63 for usual care plus GSH.

Statistical analysis. A sample size of 130 was planned on the basis of feasibility and provided 80% power at the 5% significance level (2-sided) to detect a common odds ratio (OR) of 2.5, using a proportional odds model. We performed all the analyses on an intention-to-treat basis, including all randomly assigned patients for whom outcome data were available. We adjusted for the service the patient attended, for how explained the symptoms were by disease ("not at all" or "somewhat"), and, where relevant, for the baseline score. The primary efficacy evaluation was at 3 months. Because the data on the primary outcomes were virtually complete (98%), only a complete case analysis was performed.

Analysis of the CGI score was based on comparing the randomized groups using a proportional odds model (which calculates the OR using all the scale response categories).[21] For this analysis, participants who reported feeling worse or much worse and better or much better were combined to give 3 outcome groupings per treatment arm (worse, same, or better). This analysis was repeated for the CGI at the 6-month follow-up and also for CPS and patient satisfaction at 3 and 6 months.

For the quantitative outcome measures, the group means were compared using analysis of covariance. Differences between the groups in health anxiety questions were analyzed using binary logistic regression to estimate the odds of endorsing them.

We made no correction for clustering by therapist because the main component of treatment was a standardized manual. Indeed, because the majority (72%) of participants receiving GSH were seen by one therapist, there was little scope to investigate or adjust for a clustering effect. No formal adjustment was made for multiplicity of outcome measures because there was a prespecified primary outcome measure (CGI score at 3 months), and the *p* values for all other outcomes were interpreted conservatively.

RESULTS **Sample.** Of the 3,057 patients who had their symptoms rated by a neurologist, 492 (16.1%) received a diagnosis of functional symptoms. The neurologists referred 291 of these patients, of whom 170 attended for assessment. Of the 127 patients who were recruited, 63 were randomly assigned to UC and 64 to GSH (figure 1).

Baseline characteristics. Table 1 shows characteristics of the participants at baseline. Seventy percent were women, and the mean age was 43 years. An average of 2.5 symptoms was recorded per patient; the 10 most common symptoms are shown in table 1. Nearly half of the participants reported that they were not working for health reasons, and three-fourths reported symptoms of longer than 1 year in duration. Generalized anxiety (38%) and panic (56%) were the most common psychiatric diagnoses. There were no substantial differences in baseline variables between treatment arms.

Treatment received. Participants in both treatment arms attended their primary care doctor; a minority were seen for repeat appointments by the neurologist. Eight participants had received a new prescription for antidepressants by 3 months and an additional 6 by 6 months.

UC alone. Of 14 new prescriptions for antidepressants, 11 were for participants in the UC group. One participant receiving UC received CBT outside the trial.

GSH. All participants allocated to GSH were given the workbook, and 62 of 64 (97%) received at least one session of guidance in its use. The first 46 were allocated to one therapist and the remaining 18 to the other. The mean number of sessions given was 3 (range 0–4) of average duration 30 minutes. Only 5 sessions were con-

Table 2 Comparison of outcome measures between trial arms at 3 months

	Usual care		Usual care + GSH			
Outcome measure	No.	% Better and much better	No.	% Better and much better	Treatment effect (95% CI)	*p* Value
Change in overall health (CGI)	63	17	62	30	2.4 (1.2 to 4.7)[a]	0.016
Change in presenting symptoms (CPS)	63	29	62	38	2.3 (1.2 to 4.6)[a]	0.014
	No.	Mean (SD)	No.	Mean (SD)		
Symptom burden (PHQ-13)	62	7.0 (3.0)	61	6.2 (3.3)	−1.0 (−1.7 to −0.2)[b]	0.009
Depression (HADS)	61	7.3 (4.1)	61	6.0 (4.9)	−0.8 (−1.8 to 0.3)[b]	0.153
Anxiety (HADS)	60	8.2 (4.9)	56	6.6 (3.9)	−1.1 (−2.4 to 0.1)[b]	0.075
SF-12 Physical Function	62	50 (40)	60	60 (39)	4 (−4 to 12)[b]	0.347
Belief symptoms are permanent	61	3.4 (1.1)	61	3.2 (1.2)	−0.2 (−0.6 to 0.1)[b]	0.231
Belief symptoms are a mystery	61	3.7 (1.1)	61	3.3 (1.4)	−0.4 (−0.8 to 0.0)[b]	0.059
	No.	Percentage "no"	No.	Percentage "no"		
Health anxiety: Is there something seriously wrong with your body?	60	55	61	75	3.3 (1.3 to 8.6)[c]	0.012
Health anxiety: Do you worry a lot about your health?	61	44	61	64	3.4 (1.4 to 8.6)[c]	0.009
	No.	Percentage "very good" and "excellent"	No.	Percentage "very good" and "excellent"		
Satisfaction: Overall quality of care	54	27	60	67	6.7 (3.1 to 14.4)[a]	<0.001
	No.	Percentage "possibly" and "definitely"	No.	Percentage "possibly" and "definitely"		
Satisfaction: Would recommend to a friend	55	46	60	88	10.5 (4.6 to 24.3)[a]	<0.001

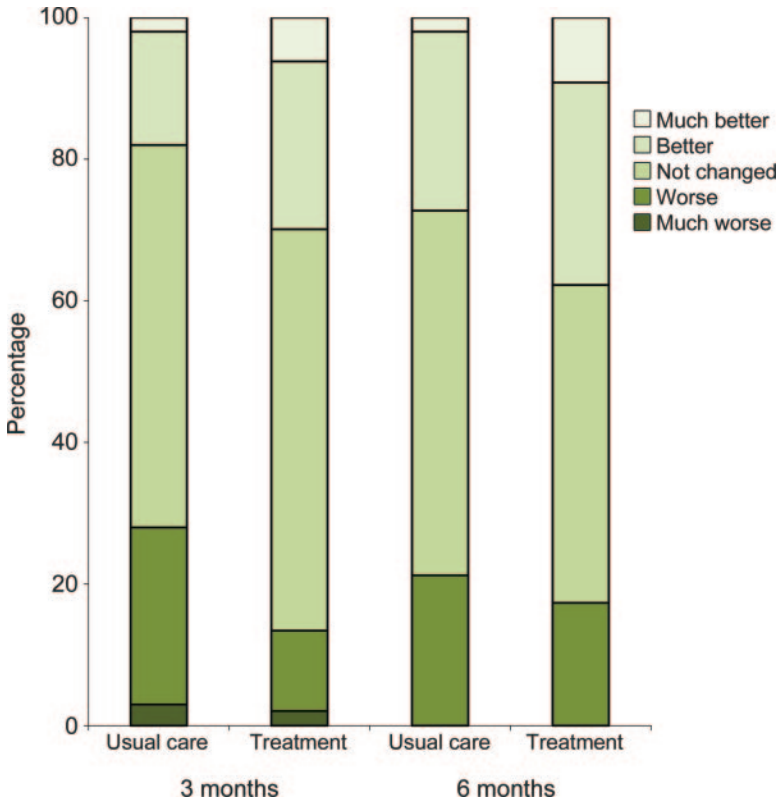
Abbreviations: CGI = clinical global improvement scale; CI = confidence interval; CPS = change in presenting symptoms scale; GSH = guided self-help; HADS = Hospital Anxiety and Depression Scale; PHQ-15 = Patient Health Questionnaire; SF-12 = Medical Outcomes Short Form 12-Item Scale.

[a] Common odds ratio from proportional odds regression model, adjusted for center and organicity.

[b] Mean difference, adjusted for baseline, center, and organicity.

[c] Odds ratio from logistic regression model, adjusted for baseline, center, and organicity.

Figure 2 Self-rated change in overall health (CGI). Relative frequencies and treatment group at 3 and 6 months



ducted by telephone. Adherence to the therapists' manual was rated as good in 23 of 25 participants (92%).

Completeness of data. Only 2 patients had missing data on the primary outcome. The percent missing for each secondary measure is shown in the tables. Data were collected by telephone from 14% (18 of 127) at 3 months and 22% (28 of 127) at 6 months.

Primary outcome. We report primary outcome data in dichotomized form in table 2 and in complete form in figure 2. Analysis of the CGI score at 3 months, using a proportional odds model, which uses the whole scale, yielded an adjusted common OR for an improved outcome with GSH of 2.36 (95% confidence interval [CI] 1.17–4.74; $p = 0.016$). There was an absolute difference of 13% between treatment arms in those categorized as better, equivalent to a number needed to treat (NNT) of 8.

Secondary outcomes. Secondary outcomes at 3 months are reported in table 2. At 3 months, participants allocated to GSH reported a greater improvement in presenting symptoms (adjusted common OR 2.33, 95% CI 1.19–4.56; $p = 0.014$) and a reduced symptom burden (adjusted mean difference −0.99; 95% CI −1.73 to −0.25; $p = 0.009$). There were, however, no differences between treatment arms in physical function, anxiety, or depression. Health anxiety (concern that there is something seriously wrong with your body and worry a lot about your health) was lower in those allocated to GSH. There were, however, no effects on beliefs about health (symptoms are permanent and symptoms are a mystery). Satisfaction with treatment received at 3 months was much greater for participants allocated to GSH.

Secondary outcomes at 6 months are reported in table 3. The adjusted common OR for an improved outcome with GSH on the CGI was 1.45 (95% CI 0.75–2.83) and was no longer statistically significant ($p = 0.27$). However, participants allocated to GSH continued to report a greater improvement in presenting symptoms (adjusted common OR 2.31, 95% CI 1.18–4.51; $p = 0.014$) and now physical function (adjusted mean difference 11.05, 95% CI 3.03–19.06; $p = 0.007$). Health anxiety was no longer less in those allocated to GSH, but the belief that the symptoms are permanent was. Satisfaction with treatment at 6 months remained much greater for those allocated to GSH.

No unintended adverse effects of treatment were observed.

DISCUSSION We found that addition of GSH to UC improved subjective health at 3 months more than UC alone did. The treatment effect was of moderate size with a 13% difference between treatment arms in participants rating themselves as better or much better (corresponding to a NNT of 8). Taking these results together with the greater improvements in presenting symptoms, reduced symptom burden, less health anxiety and greater satisfaction with care, the chronicity of the patients' illnesses, and the simplicity of the intervention and its safety, we believe that the observed treatment effect is clinically useful.

At the 6-month follow-up, the additional effect of GSH on improvement in subjective health was smaller (OR 1.45) and no longer statistically significant. There was, however, a greater improvement in presenting symptoms, less belief in the symptoms being permanent, greater satisfaction with care, and a clinically significant 11-point difference on the SF-12 physical functioning scale.[22] The smaller treatment effect on the primary outcome at follow-up suggests that future studies should test the effect of adding a maintenance phase to the GSH guidance.

There are limitations to this study. Although the sample of patients recruited was identified by screening and therefore more likely to be representative of patients attending neurology clinics than of referrals, the proportion reported as having functional symptoms (16%) was smaller and the severity of their ill-

Table 3 Comparison of outcome measures between trial arms at 6-month follow-up

Outcome measure	Usual care		Usual care + GSH		Treatment effect (95% CI)	*p* Value
	No.	% Better and much better	No.	% Better and much better		
Change in overall health (CGI)	62	27	63	38	1.5 (0.7 to 2.8)[a]	0.269
Change in presenting symptoms (CPS)	62	30	63	47	2.3 (1.2 to 4.5)[a]	0.014
	No.	Mean (SD)	No.	Mean (SD)		
Symptom burden (PHQ-13)	60	6.3 (2.9)	56	5.9 (3.3)	−0.7 (−1.5 to 0.1)[b]	0.076
Depression (HADS)	60	7.1 (4.1)	56	5.5 (5.7)	−1.0 (−2.2 to 0.2)[b]	0.105
Anxiety (HADS)	60	8.2 (4.9)	56	6.6 (3.9)	−1.4 (−2.7 to −0.2)[b]	0.028
SF-12 Physical Function	60	50 (41)	55	68 (36)	11 (3 to 19)[b]	0.008
Belief symptoms are permanent	60	3.5 (1.1)	56	3.1 (1.3)	−0.5 (−0.9 to −0.1)[b]	0.024
Belief symptoms are a mystery	59	3.5 (1.3)	56	3.1 (1.5)	−0.3 (−0.8 to 0.2)[b]	0.199
	No.	Percentage "no"	No.	Percentage "no"		
Health anxiety: Is there something seriously wrong with your body?	60	60	56	70	1.8 (0.7 to 4.6)[c]	0.222
Health anxiety: Do you worry a lot about your health?	60	55	56	61	1.7 (0.7 to 3.9)[c]	0.253
	No.	Percentage "very good" and "excellent"	No.	Percentage "very good" and "excellent"		
Satisfaction: Overall quality of care	50	29	54	61	4.0 (1.9 to 8.5)[a]	<0.001
	No.	Percentage "possibly" and "definitely"	No.	Percentage "possibly" and "definitely"		
Satisfaction: Would recommend to a friend	50	46	54	80	9.6 (4.1 to 22.6)[a]	<0.001

Abbreviations: CGI = clinical global improvement scale; CI = confidence interval; CPS = change in presenting symptoms scale; GSH = guided self-help; HADS = Hospital Anxiety and Depression Scale; PHQ-13 = Patient Health Questionnaire; SF-12 = Medical Outcomes Short Form 12-Item Scale.

[a] Common odds ratio from proportional odds regression model, adjusted for center and organicity.

[b] Mean difference, adjusted for baseline, center, and organicity.

[c] Odds ratio from logistic regression model, adjusted for baseline, center, and organicity.

ness was greater than expected from previous surveys.[5,23] This finding suggests that neurologists were selecting which patients to refer. We included patients with a variety of symptoms, and the resulting heterogeneity potentially obscures the size of the treatment effect for individual symptoms. Although there is always a lack of certainty that symptoms are definitely functional and not indicative of organic disease, follow-up evidence from the same services suggests that the diagnosis is rarely wrong.[23] Even if organic disease subsequently emerges, as long as GSH is given as a supplement to rather than as a replacement for UC, no harm is likely to result. The UC given to participants in the trial was enhanced by informing the patients' primary care doctors of the outcome of the psychiatric assessment. Although the clinicians who provided GSH were trained in CBT, we know from adherence ratings of session recordings that they provided only guidance and not CBT. Because participants allocated to GSH received a complex intervention of workbook, attention, and face-to-face guidance sessions, we cannot identify which of these components was the most important. Our outcomes were measured by self-report, reflecting the subjective nature of the problems we were treating. However, the nature of the treatments meant that participants could not be blinded to their allocation, which could have potentially biased their outcome ratings. Finally, the follow-up period was relatively short, given the chronicity of the patients' illnesses. Future effectiveness studies should examine longer-term outcomes as well as costs.

There are many uncertainties about how best to manage this large and important group of patients. First, what should the treatment be? Whereas intensive psychologically oriented CBT is effective for pa-

tients with functional symptoms who seek it,[24,25] we have found that CBT based on a functional explanation can be acceptable to relatively unselected neurology patients. Second, where should treatment be delivered? Although most previous studies have included only patients willing to attend mental health services,[26–28] this trial shows that treatment can be provided in neurology clinics.[29] Third, who should deliver treatment? CBT delivered by trained therapists is expensive to provide, and therapists may simply not be available. Primary care physicians can be trained to provide psychological treatment for functional symptoms, but this has been found to be of limited efficacy, in part because of the difficulty of delivering it in routine practice[30,31]; treatment by medical specialists is likely to have similar limitations. This trial suggests that CBT given as GSH offers a potentially widely available, effective, and cost-effective treatment for the large number of neurology patients with functional symptoms.

This trial provides initial evidence that CBT-based GSH for neurology patients with functional symptoms is feasible to deliver and acceptable to the patients and produces better outcomes than UC alone, at least in the short term. It therefore offers a novel and potentially useful first step in improving the management of functional symptoms. Further development of this form of treatment to increase its effectiveness and to evaluate its cost-effectiveness is required. We also hope that this trial encourages others in interdisciplinary treatment research for patients with this problem.

AUTHOR CONTRIBUTIONS

All authors contributed to study design, execution and interpretation, and drafting and revision of the manuscript. Statistical analyses were conducted by G.M. and I.B.

ACKNOWLEDGMENT

The authors thank the following contributors: Sarah Hoskin, BSc (University of Edinburgh, data collection); Barney Coyle, MB (NHS Lothian, patient assessments); Margot Nolan, MB (NHS Lothian, patient assessments); Carina Hibberd, PhD (University of Edinburgh, database construction); Catriona Kent, MSc (NHS Greater Glasgow and Clyde, self-help therapist); and Lorna Torrens, PhD (NHS Lothian, self-help therapist). Practical assistance in recruitment and other work in support of the trial by the neurologists in the Edinburgh and Glasgow participating centers is acknowledged. Text from *Overcoming Depression and Low Mood: A Five Areas Approach*[11] and *Overcoming Anxiety: A Five Areas Approach*[12] was included in the self-help workbook with permission from Hodder Arnold Publishers. Randomization was administered by the Robertson Centre in Glasgow.

DISCLOSURE

Dr. Sharpe serves as an Associate Editor for the *Journal of Psychosomatic Research* and on the editorial boards of *General Hospital Psychiatry*, *Psychological Medicine*, and *Psychosomatics*; serves as an independent medical advisor to AEGON Insurance; receives publishing royalties from Oxford University Press, Wiley-Blackwell, and Churchill Livingstone and serves on a DSM5 work group for the American Psychiatric Association; is a member of Council of the Academy of Psychosomatic Medicine; and receives research support from the Medical Research Council UK and Cancer Research UK. Dr. Walker receives research support and salary from Cancer Research UK. Dr. Williams serves on a scientific advisory board for the University of Southampton; has received funding for travel from the NHS; serves on the editorial boards of *Psychology and Psychotherapy* and *Behavioural and Cognitive Psychotherapy*; receives publishing royalties from Hodder Arnold, Saunders, and Oxford University Press for several books and CD ROMs and on sales of computerized training and CCBT resources from Media Innovations, LLC; has commercial interests in the dissemination of CBT-based self-help books, training, and other materials; serves as a consultant for Media Innovations, LLC; he and his spouse serve as directors of and own stock in a company that owns and markets CBT training and treatment resources; and receives/has received research support from the Health Technology Appraisal Programme, the NHS, the Chief Scientist of Scotland Office, and the Greater Glasgow and Clyde Primary Care Trust. Dr. Stone has received funding for travel from sanofi-aventis and has received research support from the Edinburgh Neurology Research Fund. Dr. Cavanagh serves as a consultant for the Scottish Mental Health Research Network and receives/has received research support from Greater Glasgow and Clyde NHS, the Bailey Thomas Charitable Trust, SINAPSE, and the Mortimer and Theresa Sackler Foundation. Dr. Murray receives research support from Cancer Research UK, Medical Research Council UK, and the NIH and has served as a consultant for GlaxoSmithKline in a medico-legal proceeding. Dr. Butcher serves as a consultant for SERVIER. Dr. Duncan has received funding for travel from UCB and GlaxoSmithKline and has received speaker honoraria from UCB and Eisai Inc. Dr. Smith reports no disclosures. Dr. Carson serves as Director of the British Neuropsychiatry Association and as an Executive Member of the Neuropsychiatry Board, Royal College of Psychiatrists; serves on the editorial board of the *Journal of Neurology, Neurosurgery, and Psychiatry*; and receives research support from the Medical Research Council UK.

Received November 28, 2010. Accepted in final form April 5, 2011.

REFERENCES

1. Gureje O, Simon GE, Ustun TB, Goldberg DP. Somatization in cross-cultural perspective: a World Health Organization study in primary care. Am J Psychiatry 1997;154:989–995.
2. Wessely S, Nimnuan C, Sharpe M. Functional somatic syndromes: one or many? Lancet 1999;354:936–939.
3. Hamilton J, Campos R, Creed F. Anxiety, depression and the management of medically unexplained symptoms in medical clinics. J R Coll Physicians Lond 1996;30:18–20.
4. Nimnuan C, Hotopf M, Wessely S. Medically unexplained symptoms: an epidemiological study in seven specialities. J Psychosom Res 2001;51:361–367.
5. Carson AJ, Ringbauer B, Stone J, McKenzie L, Warlow C, Sharpe M. Do medically unexplained symptoms matter? A prospective cohort study of 300 new referrals to neurology outpatient clinics. J Neurol Neurosurg Psychiatry 2000;68:207–210.
6. Carson AJ, Best S, Postma K, Stone J, Warlow C, Sharpe M. The outcome of neurology outpatients with medically unexplained symptoms: a prospective cohort study. J Neurol Neurosurg Psychiatry 2003;74:897–900.
7. Sharpe M, Stone J, Hibberd C, et al. Neurology outpatients with symptoms unexplained by disease: illness beliefs and financial benefits predict 1-year outcome. Psychol Med 2010;40:689–698.
8. Kroenke K. Efficacy of treatment for somatoform disorders: a review of randomized controlled trials. Psychosom Med 2007;69:881–888.
9. Sharpe M, Carson AJ. "Unexplained" somatic symptoms, functional syndromes, and somatization: do we need a paradigm shift? Ann Intern Med 2001;134(suppl):926–930.

10. Gellatly J, Bower P, Hennessy S, Richards D, Gilbody S, Lovell K. What makes self-help interventions effective in the management of depressive symptoms? Meta-analysis and meta-regression. Psychol Med 2007;37:1217–1228.
11. Williams CJ. Overcoming Depression and Low Mood: A Five Areas Approach, 2nd ed. London: Hodder Arnold; 2006.
12. Williams CJ. Overcoming Anxiety: A Five Areas Approach. London: Hodder Arnold; 2001.
13. Stone J, Carson A, Sharpe M. Functional symptoms in neurology: management. J Neurol Neurosurg Psychiatry 2005;76(suppl 1):i13–i21.
14. Morriss RK, Gask L. Treatment of patients with somatized mental disorder: effects of reattribution training on outcomes under the direct control of the family doctor. Psychosomatics 2002;43:394–399.
15. Spitzer RL, Williams JB, Kroenke K, et al. Utility of a new procedure for diagnosing mental disorders in primary care: the PRIME-MD 1000 study. JAMA 1994; 272:1749–1756.
16. Kroenke K, Spitzer RL, Williams BW. The PHQ-15: validity of a new measure for evaluating the severity of somatic symptoms. Psychosom Med 2002;64:258–266.
17. Ware J Jr, Kosinski M, Keller SD. A 12-Item Short-Form Health Survey: construction of scales and preliminary tests of reliability and validity. Med Care 1996;34: 220–233.
18. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand 1983;67:361–370.
19. Speckens AE, Spinhoven P, Sloekers PP, Bolk JH, Van Hemert AM. A validation study of the Whitely Index, the Illness Attitude Scales, and the Somatosensory Amplification Scale in general medical and general practice patients. J Psychosom Res 1996;40:95–104.
20. Weinman J, Petrie KJ, Moss-Morris R, Horne R. The Illness Perception Questionnaire: a new method for assessing the cognitive representation of illness. Psychol Health 1996;11:431–445.
21. McCullagh P. Regression models for ordinal data. J R Statist Soc Ser B Methodol 1980;42:109–142.
22. Samsa G, Edelman D, Rothman ML, Williams GR, Lipscomb J, Matchar D. Determining clinically important differences in health status measures: a general approach with illustration to the Health Utilities Index Mark II. Pharmacoeconomics 1999;15:141–155.
23. Stone J, Carson A, Duncan R, et al. Symptoms 'unexplained by organic disease' in 1144 new neurology outpatients: how often does the diagnosis change at follow-up? Brain 2009;132:2878–2888.
24. Allen LA, Woolfolk RL, Escobar JI, Gara MA, Hamer RM. Cognitive-behavioral therapy for somatization disorder: a randomized controlled trial. Arch Intern Med 2006; 166:1512–1518.
25. Escobar JI, Gara MA, Diaz-Martinez AM, et al. Effectiveness of a time-limited cognitive behavior therapy type intervention among primary care patients with medically unexplained symptoms. Ann Fam Med 2007; 5:328–335.
26. Kroenke K, Swindle R. Cognitive-behavioral therapy for somatization and symptom syndromes: a critical review of controlled clinical trials. Psychother Psychosom 2000;69: 205–215.
27. Sumathipala A. What is the evidence for the efficacy of treatments for somatoform disorders? A critical review of previous intervention studies. Psychosom Med 2007;69: 889–900.
28. Allen LA, Escobar JI, Lehrer PM, Gara MA, Woolfolk RL. Psychosocial treatments for multiple unexplained physical symptoms: a review of the literature. Psychosom Med 2002;64:939–950.
29. Reuber M, Burness C, Howlett S, Brazier J, Grunewald R. Tailored psychotherapy for patients with functional neurological symptoms: a pilot study. J Psychosom Res 2007;63: 625–632.
30. Morriss R, Dowrick C, Salmon P, et al. Cluster randomised controlled trial of training practices in reattribution for medically unexplained symptoms. Br J Psychiatry 2007;191:536–542.
31. Rosendal M, Olesen F, Fink P, Toft T, Sokolowski I, Bro F. A randomized controlled trial of brief training in the assessment and treatment of somatization in primary care: effects on patient outcome. Gen Hosp Psychiatry 2007;29: 364–373.